



Munich Personal RePEc Archive

## **Scarcity, self-interest and maximization from Islamic angle**

Hasan, Zubair

INCEIF; The Global University of Islamic Finance, Kuala Lumpur

08. March 2011

Online at <http://mpra.ub.uni-muenchen.de/31631/>  
MPRA Paper No. 31631, posted 17. June 2011 / 10:40

# Scarcity, self-interest and maximization from Islamic angle

Prof. Dr. Zubair Hasan<sup>1</sup>

INCEIF: The Global University of Islamic Finance, Malaysia

---

## Abstract

*This paper clarifies some misinterpretations of three foundational concepts in mainstream economics from Islamic viewpoint. These are scarcity of resources, pursuit of self-interest and maximizing behavior of economic agents. It argues that stocks of resources that God has provided are inexhaustible. But important is the availability of resources out of stocks to mankind. Availability is a function of human effort and the state of knowledge about resources over time and space. In that sense resources are scarce in relation to multiplicity of human wants for Islamic economics as well. Self-interest must be distinguished from selfishness. The motive operates on both ends of human existence: mundane and spiritual. Its pursuit does not preclude altruism from human life. Counter interests keep balance in society and promote civility. Islam recognizes the motive as valid. Maximization relates to quantifiable ex ante variables. Uncertainty of future outcomes of actions makes maximization a heuristic but useful analytical tool. The concept is value neutral. What is maximized, how and to what end alone give rise to moral issues. Modified in the light of Shari'ah requirements the three concepts can provide a firmer definition for Islamic economics centered on the notion of falah.*

Key words: Scarcity; self-interest; opportunity cost; maximization; Islamic Economics; israf;; heuristics

---

## 1. Introduction

I feel honored and privileged in presenting this lecture to the distinguished audience who spared some of their precious time to grace the occasion with their presence. The topic I am going to talk on this evening may not look so cogent, but is in fact a compact structure of immense significance to economic science. Scarcity of resources, pursuit of self-interest, and maximization of gains together make the foundation on which is raised the superstructure of mainstream economics (Samuelson 1947).

The social order of Islam had been flourishing the world over for centuries before the modern capitalism appeared on the scene with the dawn of industrial revolution in England. It is seldom realized that the basic features of the capitalistic system were evolving all along during the era of Muslim Spain in Europe (Hasan 1992, p.239). For instance, the system like Islam allowed private ownership of property, granted freedom of enterprise and approved a free play of market forces in the economy. It also eulogized trade and held in high esteem business profits that Islam counted among the bounties of

---

<sup>1</sup> IRTI had picked up this topic from the two that I had submitted to them for the lecture. Furthermore, it is based on the literature available on Islamic economics in English or Urdu. I am grateful to Dr. Ausaf Ahmad an old colleague and Dr. Waleed Addas of IDB who went through an earlier draft of this work and made some helpful comments. Mughees Shaukat and Nurhafiza A. K. Malim my MIF students at INCEIF also deserve a mention for their help in the preparation of this manuscript.

God. But these features of the Islamic import became increasingly distorted as capitalism advanced on the secular path after the Vienna Circle declaration in 1929 of their proposed worldview as being scientific and, therefore, value neutral. The system riding on colonial spoils eventually won global status and dominance. Today, we witness a rather surprising sort of reversal in history: Muslim scholars seemingly oblivious to the past emphasize the affinities of the Islamic system along these lines with capitalism as (if) borrowings from that system. Indeed, of late they see and seek the fulfillment of their aspirations in reforming capitalism, not in erecting the Islamic order as an *alternative* which was until recently their cherished goal.<sup>2</sup> Must then it not look queer that Islamic economists remain divided on admitting that resources for want satisfaction are scarce, that human beings essentially seek to promote their own interest, and that they want to maximize their gains? The overall position on these issues and their ramifications in the literature remains *inconclusive*, to put it cogently. I shall argue that these postulates have also to be the fulcrum of the emerging discipline of Islamic economics for its survival. Required is a re-look at their content, range, and character, not rejection.

For a clear understanding of economic analyses, prior reference to some methodological points may be helpful. Mainstream economics picks up its notions like consumption, production, firm, profit, demand, supply exchange, entrepreneur, growth and so on mostly from the bin of common parlance. But when out of these words of daily use the economists construct the ideal or the abstract types to facilitate explanation or analysis the same words their meanings change, at times radically. Not many can always understand that economists may be talking about something quite different what the same word conveys to the man in the street. Even among the economists, differences of opinion can often be traced back to the divergent meanings in their minds of the same term they are using. This happens because the terms tend to assume different meaning depending on the goal of the model or the type of market structure one has in mind. For

---

<sup>2</sup> M. N. Siddiqi (2006, p.3) confirms that this was the stance of earlier Islamic economists (including him). But he later shifted from *Islamization of economics* (1984) to *teaching economics from Islamic perspective*. (1998). On this see also Hasan 1998a. Khurshid Ahmad, a leading Islamic economist, too says in a lecture (2007) that Islamic reforms in the field of economics have to be sought *within* the capitalistic framework. Finally, the title of an in press book of Murat Cizaca reads: *Islamic Capitalism and Finance*. The process of one-sided convergence has been hastened all the more by the imitative expansion of Islamic finance.

example, fiat money is wealth for the one who sees it fructifying in the pockets of individuals, but the money stock is not wealth for the one who is occupied with national income estimation. Islamic economists have to be conscious of this fact while commenting on mainstream ideas. Keeping in mind the distinction between ex post and ex ante versions of the same concept and its implications is equally important.

A brief explanation of historical bearings of the concepts under review may help clear the cobwebs around them and see the related issues in a right perspective. This we do in the following Section 2. In Section 3 we explain the meaning of scarcity, its social implications and its Islamic import. Section 4 argues that pursuit of self-interest is built in human nature and that Islam has no hesitation to recognize the fact. Section 5 is devoted to explain the maximizing behavior of economic agents and its relevance for Islamic economics. Finally, Section 6 concludes the discussion providing a brief definition of Islamic economics based on the three basic notions discussed above and contains a few observations on the approach to the teaching of Islamic economics at the higher levels.

## **2. Pre-Islamic context**

Human beings have always desired and strived for improving their living conditions through increase in consumption ever since Adam put his foot on the planet Earth. They instinctively desire more and more of goods for use compared to what they command resources to produce. Thus, scarcity of resources in the face of unrestricted proliferation of human wants (including spiritual) gives rise to activities that we study in what has long come to be known as economics. But a study of economics, as of any other subject, always relates to a *time span* – large or small - on its never ending evolutionary path. It is vital to learn about the times when Islam joined the caravan for taking account of how it did or can contribute to the discipline to promote peace and prosperity all around.

It would perhaps be appropriate to start with the contribution of the Greek thinkers to the history of economic thought, the leading lights among them being Hesiod, Democritus, Xenophon, and Aristotle. In their era (800 BC – 322 BC) the population of the world must have been tiny and scattered. Resources were plentiful. Scarcity was not usually in the reckoning of the group, nor was therefore efficiency the focus of attention. Markets had

arrived but they played little role in the allocation of resources which act was regulated by authority, custom, or faith. As life was simple, there were few topics to discuss. And, yet the Greek provided valuable insights into economic theory. Notable was their cohesive presentation of the *natural law* that remains even to this day the guiding star of the free market economies. Not a few of their contributions influenced not only Islamic thinking but left their foot marks far beyond on the path of human knowledge.

Two important themes emerged from the writings of the Greek thinkers. One relates to the sort of approach required for a social inquiry. They believed that it was inappropriate to sort out human activities into categories – economic or non-economic, for instance – for inquiry and investigation. They held that social problems were interwoven as are shades in a painting and can best be studied in relation to one another as parts of a whole. Early Islamic scholars did follow the same method in their writings. However, the convention has led not a few Islamic scholars even of the current vintage into believing that Islamic economics must continue taking a holistic view of the social phenomena to arrive at correct understanding of the issues and design appropriate policy prescriptions.

The insistence is misleading. Note that authentic records regarding world population are not available for the seventh century at the point when Islam made its advent on the scene. Table 1 shows that it was around 200 million at the dawn of Christianity and not more than 275 million for the year 1000. Thus, putting the world population at 235 million for the year 650 may not be a wild guess.<sup>3</sup> The size – still tiny as it then was – allows the inference that social environment of early Muslim scholars may not have been

**Table 1 World Population Growth**

Year	1	1000	1500	1650	1750	1804	1850	1900	1927	1950	1960	1970	1980	1990	1999	2009
Population	200m	275 m	450 m	500 m	700 m	1.0 b	1.2 b	1.60 b	2.0 b	2.55 b	3.00 b	4.00 b	4.50 b	5.30 b	6.00 b	6.80 b

Source: Matt Rosenberg, About.com Guide [p://geography.about.com/od/obtainpopulationdata/a/worldpopulation.htm](http://geography.about.com/od/obtainpopulationdata/a/worldpopulation.htm)

much different from that of Greek writers and their immediate followers. Thus, the former too could advocate for and indulge in blanket sort of writings, taking a unitary view of the social phenomena. But the approach was in no way a faith imperative. Today

<sup>3</sup> The population of Saudi Arabia for 2008 is estimated at 22 million excluding foreign residents and no more than 2 million for Mecca and Medina put together. Also, it grew at a fast pace only after the discovery of oil in the land during the 1960s. However, based on the data cited the population of the area now constituting Saudi Arabia may not have comprised of more than several thousands of people on a safe estimate.

the world population is more than 7 times of what it was in 1750 that is more than a thousand years after the advent of Islam. The modern era has witnessed a vast expansion in human numbers as also in knowledge. These expansions have been further spurred by the accompanying rapid development in the means of transportation and communication, making the globe smaller in terms of time and space. Consequently, humanity has produced more output since 1950 to 2000 than it could during its entire existence prior to the end year (AI 3, 2006). On the other side of the fence, war and violence, crime and corruption, tyranny and oppression, poverty and plunder, affluence and bankruptcy, rapacious use of natural resources and environmental calamities dot the social firmament as never before. Can one address the innumerable, varied, and nerve-breaking issues in a holistic approach the Islamic economists at times advocate for? Human brain has limitations, computers too.<sup>4</sup>

Scarcity of resource or their allocation to various uses not being worrisome to the Greek, their second theme focused attention on the questions of fairness, justice and equity. They examined exchange relations and prices essentially from an ethical prism. The dominance of moral sentiments could well be understood in economies where market activity still remained inconsequential. The early Islamic scholars too focused on the issues of fair play and justice in the same way as their predecessors. However, with the emergence of markets as the driving force of fast developing economies of the West during the more recent times, rationalism replaced faith in choice-making and ethical concerns have perforce long taken the back seat. But it is interesting to note that the significance of ethical conduct in business is now resurfacing in the Western literature on Corporate Governance; thanks to the worldwide devastation the current financial crisis has brought in its train and the mountains of moral bankruptcy it has unveiled. Islamic economics has an opportunity to demonstrate its healing touch but only if and if only the Muslim countries could produce substantive illustrations of *Islamic norms at work*. Political leadership in these countries is not by and large in a position to meet the Islamic aspirations of their people for reasons extrinsic to their thinking.

---

<sup>4</sup> Indeed, it was the very ability to make an abstract separation of human activities that represents the part of intellectual apparatus necessary for the 'birth' of economics and other social sciences. [Landreth – Colander, p.25]

The fact that Islamic norms are not shaping realities in Muslim countries has led to much misplaced argumentation between Islamic economists on the one hand and their mainstream critics on the other. Both have been oblivious to one principle of simple logic that one must compare the ideals of his system with the ideals – *not realities* - of the other. Islamic economists invariably err in comparing the ideals of their system based on what *ought to be* with *what is* of capitalism in operation.<sup>5</sup> The works of Islamic scholars indulge with rare exceptions in such sort of apple-orange comparisons. The opponents from the West likewise attack Islamic *ideals* as having failed in erecting an economic system citing conditions as they *are* in present day Muslim countries. Much of the criticism of Islamic economics emanating from foreign scholars whom Timor Kuran typically exemplifies<sup>6</sup> tends to fall in the same category. The critics fail to realize that the long colonial past of these countries and its later continuation in different garbs seldom allowed their people the breath or space for implementing the Islamic agenda for social development they aspired for. Let one realize what Islam requires Muslims may not always be doing and what they are doing may not always be Islamic.

Islamic economics has potential of contributing to the communal (*umatic*) effort for realizing a cohesive, stable and progressive social order if only the believers could alleviate subjectivity coloring their thought processes and develop a purposive understanding of the mainstream economics so as to make contributions to the discipline with wider acceptability while remaining on the ‘right path’. Furthermore, required is the emphasis on the substance rather than on the form of what Islam stands for. It is the understanding, not antagonism and cooperation not conflict at both ends that could

---

<sup>5</sup> For example, suppose one had a magic wand that could be used for making competition *perfect* in all sorts of markets – the ideal of capitalism. Then, one could presumably venture the demonstration that much of the divergence between the ideal Islamic economic structures and that of capitalistic order evaporated into thin air.

<sup>6</sup> Kuran (1989, p.178) makes a rather eristic remark on my demonstration of how profit sharing ratio would be determined in Islamic finance under certain assumptions (Hasan 1985). He writes: “Another author, using a mathematical model says that the shares are to be determined through the interaction of the supply and demand of contracts – as if, once again, an equilibrium allocation could never be lopsided”. Now, I no where talked about the qualitative aspect of equilibrium let alone holding *as if* the equilibrium ratio can or will always ensure a just division of profit between the parties. At the same time, is it not a fact that most of the theoretical constructs in economics rest on virtue-free equilibrium heuristics?

eventually win the day.<sup>7</sup> Let us have a look at the foundation stones of mainstream economics from this broad, realistic and purposive perception.

### 3. Scarcity of Resources

The Greek writers did not care to give scarcity any precise meaning or explore its ramifications as in their era population was tiny and resources plentiful. But there were things like for instance certain types of plants or rocks they did not come across so often: they were rare i.e. very small in quantities. It was the experience of *rarity* in that sense which much later led to the notion of *scarcity*. Senior (1790 – 1864) was presumably the first economist to lay stress on scarcity and regarded it as the basis of value. *Rarity* he thought was not enough for a thing to assume value; it must also satisfy some want. It had to be rare in terms of utility. Walrus later employed the term scarcity in that sense (Gide and Rist 1953 p. 357).

Scarcity as the base of value wore a new import when Lionel Robbins in his influential work, *An Essay on the Nature and Significance of Economic Science* (1932) projected the notion as the definitional base of economics.<sup>8</sup> He carried its relationship with human wants a step further. To him, resources including time could not be scarce unless they had alternative uses (pp. 13-14). This attribute of scarcity forces on human beings the imperative of *choice making* in the face of multiplicity of wants: wherever there was a problem of choice, there was an economic problem, Robbins declared. He thus saw scarcity as an aspect in countless human activities widening in the process the scope of economic science so as to cover a whole gamut of social problems including even marriage, crime, corruption and elections.

There is room for presumption that a remark in the *Essay* might have led Islamic scholars to deny the existence of resource scarcity altogether. Robbins wrote:

---

<sup>7</sup> It was in this context that I have long been advocating a ‘step-by-step approach to Islamizing economics as opposed to an ‘all-or-nothing’ approach implied in some major works on Islamic economics (Hasan 1988, 1998 and 2002). Haneef and Furqani (2004, p.31) find me ‘wrong’ on the point. To them, the latter approach never existed. I respect their opinion but stick to my position which incidentally finds support and clarification in a recent work. See M. Omar Farooq (2006, pp.43-44)

<sup>8</sup> The second edition of the *Essay* was published in 1935. References given in this work are from a 1945 reprint of this version downloaded from the internet.



The ends are various. The time and means for achieving these ends are limited and capable of alternative applications. At the same time the ends have different importance. Here we are sentient creatures with bundle of desires and aspirations with masses of instinctive tendencies all urging us different ways to action. But the time in which these tendencies can be expressed is limited. The external world does not offer full opportunities for their complete achievement. *Life is short. Nature is niggardly....* Human activity has not the independence of time or specific resources. There are only twenty four hours in the day. We have to choose between different uses to which they may be put” [Paraphrased from pages 12-15 with emphasis added].

Possibly, it was the attribution of niggardliness to nature as the cause for resource scarcity that Islamic economists took as an affront to the Divine Benevolence. If this presumption were correct, the reaction, in my view, was uncalled for. The statement was a manner of speaking, not an element meriting consideration in Robbins’ argument. Its elimination from the *Essay* would not subtract even an iota from the thesis of the writer.<sup>9</sup>

It is difficult to identify Islamic economists who do or do not approve the notion of scarcity as valid for their discipline. Many appear non-committal or take it for granted. Some are found on shifty grounds. But there *are* scholars who have unmistakably voiced resource scarcity as inadmissible from Islamic perspective. Monzer Kahf feels that economic problem is not of scarcity but is caused by human laziness and neglect (1992, p.115). The petite work of Mohammad Akram Khan provides a leading illustration of projecting, rather vociferously, a similar viewpoint (1994 p. 44-45). As Professor Khurshid Ahmad has written an erudite full length foreword for the author, the readers may take or mistake it as implying an approval of whatever the work contains. I had done a review of the *Introduction* (Hasan 1996) and found little difficulty with its content save the position Khan took on the scarcity of resources.

Much of the confusion on the scarcity of resources in Islamic economics seems to arise from the difference in the prisms writers use to look at the issue. Those who, like Khan, denounce resource scarcity see it from a *cosmic* angle and from that angle they correctly argue that God has been benevolent and merciful. He has stocked the earth (and the

---

<sup>9</sup> In fact, Iqbal the illustrious Urdu poet and a flag bearer of Islam smelled much more rebellious than Robbins in not a few of his poetic compositions. See this, for example: *Teray sheeshay mein maie baqi nhien hai? Bata kiya tu mera saqi nahein hai? Samander say milay pyasay KO shabnam bakhili hai yeh razzaqi nahin hai.* No wine remains in your jar? Are you not (O God) my cup filler? The thirsty gets just the dew drops from the ocean, it is (an act of) *niggardliness*, not of sustenance [Author’s translation].

heavens) with His inexhaustible treasures for all times to come not only for human beings but for other creatures as well (Qur'an 2:29; 7:10; 14:34; 15:20-21). Also, God has made resources in a mold that they would readily submit to human command and effort (For example, see Qur'an 7:10; 14:32-33). The argument at the cosmic plane is surely irrefutable; it bears testimony from the Holy Qur'an.

However, the point missing in the above argument is that the Divine *provision* of stocks, however inexhaustible, is not a sufficient condition for the *availability* of resources to human beings in a measure at any time or space. Existence of resources is necessary but it is their availability to mankind that lends content and meaning to the notion of scarcity as the basis of economics. The availability of resources to human beings depends on the state of their knowledge and expands as they strive to discover more and more about their uses, location, methods of extraction, and cost effectiveness through continued learning research and action. This explains why the Revelation started with *igra* and why Islam put so much emphasis on learning as no other religion did.

The Holy Qur'an not only talks of God's bountiful resources unceasingly but also informs us that He alone is the source of knowledge and the Divine wisdom releases it to those who seek; not all at once, but bit by bit so that people are not carried away by pride and arrogance (Hasan 1996). The assertion in Khan (1994) that scarcity of resources is merely a man-made phenomenon resulting from the wasteful use and mal-distribution of resources is erroneous. These factors only aggravate scarcity, they do not *cause* it. In fact, scarcity of resources in terms of their availability as explained above is conceivably a part of the Divine scheme to spur human beings into action for searching their living in the land of God and at the same time be tested in how they do it.<sup>10</sup> Life for that reason is a trial in this world. The history of human civilization is the history of the march of human conquest of nature.<sup>11</sup> In essence, it is the history of pushing outward relentlessly the

---

<sup>10</sup> Presumably, this was one reason why God stopped the falling of Manna from the skies. But Robbins employs the event to exemplify the possibility of human beings remaining temporarily free of scarcity (*Essay* p.11).

<sup>11</sup> See the Box 'Economics the Happy Science' in Landreth and Colander (1994, p.103)

frontiers of scarcity through unceasing research, inventions and innovations in science, technology and social management (Hasan 1996, p. 357).

### **Knowledge versus scarcity**

Knowledge is the weapon of mankind in the fight for making resources available from the store of nature and the potential expansion of knowledge certainly knows no limits. The race of all races on Earth has indeed been between the growth of knowledge and resource availability for producing material requisites of well-being in the face of ever increasing population. Malthus and Ricardo - the pessimists - were obsessed with the fear of an impending hell unless human beings adopted measures to keep their number in check.<sup>12</sup> Their protagonists like Seligman and others saw in the birth of a child not only a mouth demanding food but also a pair of hands capable of eventually adding to output of consumable goods. Optimists of the sort were elated by the hope of a coming paradise. The elation emanated from the sight of industrial revolution already flying high on the wings of scientific inventions and innovations.

In this non-stop race of knowledge verses scarcity the former has so far reassuringly been winning, more so over the past 150 years. Efforts are being made to quantify knowledge and measure its rate of growth. A recent work tried to fix the components of knowledge and how each of them could be measured. The investigation put to test the hypothesis if knowledge doubled every five years. In this context, 23 variables were identified as determinants of knowledge. The measurement was the number of years each component took to double itself. It is found that various components have different time measure for doubling but with right input investments we could double knowledge every 5 years (League Table 2007). In any case, there has been an explosive expansion in knowledge after the Second World War, more so in the field of science and technology. The pressure of need and innovative urges in human beings hardly allow them to relent. Indeed, the scarcity of resources has ever been the major cause of conflicts on the Earth.

---

<sup>12</sup> The ghost of scarcity their logic and evidenced unleashed continues to haunt humanity even today and has resulted over the centuries in chaotic top heavy demographic structures which some nations are now trying to correct. Family planning cannot be a public policy in a Muslim country in view of the assuaging words of the Qur'an: Kill not thy children in the fear of want. We have provided for you. We shall provide for them too (Qur'an: 17:31 also 11: 7; 51:58).

The explosion has kept mankind ahead of scarcity in the race. For instance, the population of the world in 1999 was 2.4 times of its size in 1950. During the same period the real GDP of the world measured in international US dollars increased almost 7 folds while the per capita income improved to about 3 times. Within this broad spectrum, there have of course been vast differences over time and space, the Muslim countries especially lagging far behind. They possess a major chunk of global natural resources – existing and potential - but contribute no more than 7 – 8 percent of the world GDP. They essentially

**Table 2:** World population, GDP and Per capita GDP for 1950 and 2000

Particulars	1950	2000	2000 / 1950
Population (000)	2524 324	6071 144	2.41
GDP (million dollars)*	5 329 719	36 501 872	6.85
GDP per capita (dollars)*	2111	6012	2.85

Source: The World Economy, Historical Statistics 1950 – 2001 Tables 7a, 7b, and 7c (WE website)

\* These values are expressed in 1990 Geary-Khamis dollars

are sellers of resources, not their users. This correlates well with their small contribution to the stock of knowledge in the modern era. The reversal of ranks is rather lamentable for a community whose religion started with the instructions to read.

The victory that mankind has so far achieved in the race against scarcity is not a cushion to sleep on. It is a race where temporal setbacks keep human beings constantly on steam for staying triumphant. But worrisome is the fact that success has come at a cost of which mankind became aware rather late in the day. This refers to the rapacious use of natural resources that has resulted in an almost irreversible environmental degradation.

## Scarcity and environment

The Holy Qur'an informed mankind that God has created things in measured proportions and they are held together in a delicate balance; it warned them not to spread mischief (*fisaad*) on Earth as that would disturb the natural balance.<sup>13</sup> But the warning went unheeded. The environmentalists continue to express dismay on the decaying health of the planet. Diminishing biodiversity, shrinking supplies of fresh drinking water, the vanishing of virgin forests, falling agricultural yields, and increasing frequency of natural calamities all threaten to make human life miserable on the planet, if not extinct as time rolls by.

<sup>13</sup> For example, see Qur'an 6:3; 30:41; 39:5; 54:49; 67:3-4.

In price formation, markets treat only those resources as scarce which had an opportunity cost and which the business firms have to pay for. But there are some natural resources like fresh air, soil, forests and water<sup>14</sup> that firms use not only to produce goods and services but also for disposing off the waste that production process emits. With the growth of population there are hardly any inputs that are available for production free of cost. Environmental problems arise not merely from the use of resources the firms pay for producing valuable goods and services but on a more important side from the release of wastes – poisonous liquids, gases and non-degradable materials – into the air, water and earth. The disposal of such waste imposes costs on people in various forms such as enhanced medical bills for treatment of pollution caused diseases for which no one compensates them. These types of social costs do not pass through the market (Silva et al 2009); they are *external* to it. Arnold Coase's model based on the creating property rights in environmental goods and let the polluters and sufferers bargain in the market for compensation may look valid in theory but efforts to put it into operation in the US failed to deliver results for a variety of reasons. Nations have repeatedly failed to agree on how to face the environmental challenges epitomized in climate change issues. Be it as it may, but an extension of scarcity notion to cover natural environ and make polluters pay for the damage they cause is an imperative for the resolution of environmental issues. Figure 1 explains how we can internalize social costs and make them pass through the market to curb pollution

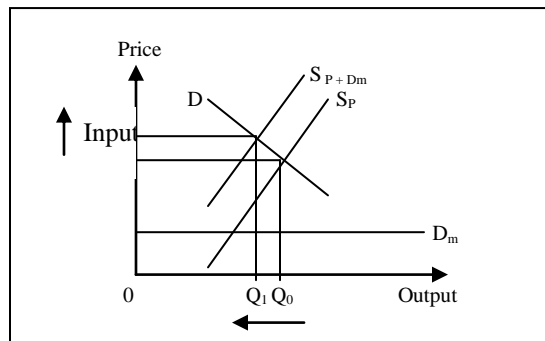


Figure 1: Taxing polluters to cover damage cost would raise price reduce output and conserves resources

<sup>14</sup> In the beginning when population was small the list of such free goods was long including land, forest products, fruits, flowers, honey, grass, water to name a few were all freely available. The list went on shrinking fast with the growth of population and the resultant expansion of human wants and production.

Here,  $D$  is the demand curve for any illustrative commodity and  $S_P$  is the corresponding supply curve based on private costs.  $D_m$  is the external cost of damage the producers of the commodity impose on society. To keep things simple, this social cost is assumed to remain unchanged whatever be the level of output. The market price is initially determined at  $P_0$ . If we add  $D_m$  to private supply cost  $S_P$ , the curve will shift upward to  $S_{P+D_m}$  expressing social cost. The cost thus increased will raise price to  $P_1$  reducing output from  $Q_0$  to  $Q_1$ . The theory is plausible provided the producers could somehow be made to pay for the damage because the environment can improve. Missing are the political will, cooperation and collective action.

Finally, scarcity is the essence of life; a part of the Divine scheme to make people work and run the affairs on Earth. In the absence of scarcity what meaning could one put on patience, tolerance, and cooperation? Who would work for whom and why? Why would people hoard wealth or need condemn the act? What shall be the form of societal organization? Above all, will economics exist as a social science; if yes to what end? In fact, it is the scarcity of resources that gave meaning and significance to the debate on the efficacy of pursuit of self-interest as the driving force of economic activities in the world.

#### **4. Pursuit of self-interest**

People seek to promote their living through increased want satisfaction. Wants being unlimited, the scarcity of resources forces people to keep self-interest in the forefront. But the priority does not imply a denial of the existence of other motives including altruism as affecting human conduct<sup>15</sup> nor does it demand their blockade. Economics as a science dealing with social behavior, studies economic activities *en mass* – the crowd, not the individual. Mainstream economists maintain that of the various motives which affect human conduct the pursuit of self-interest tends to over-ride others; it is relatively more universal and stable. Thus, self-interest spurred by scarcity emerged as the focal point in economic modeling and analyses. The acceptability of this mainstream position is also not very clear in Islamic economics.

---

<sup>15</sup> For instance Adam Smith wrote: “However selfish so ever man may be supposed, there are evidently some principles in his nature which interest in the fortune of others and render their happiness necessary to him though he derives nothing from it except the pleasure of seeing it” (Coase 1984, p.546).

Islamic economists usually follow a bifurcation of human motives into self-interest and altruism that initially appeared in the mainstream writings. In the Islamic faith man is bipolar in creation: a combination of dust and divine. He has traits both noble and ignoble residing and fighting *within* his own person. Islam recognizes this fact. Thus, the Shari'ah encourages people to acquire and enjoy all good (*Tayyab*) things in life in expression of the gratitude for Divine benevolence. However, they are instructed to observe moderation in consumption and avoid waste.<sup>16</sup> If people in their greed cross the limits, the pursuit of self-interest requires containment, not rejection. After all, why should the believers meet their religious obligations – pray, spend in the way of God, fast, go for the pilgrimage and do good deeds if not in *self-interest*: that is for seeking the pleasure of their Creator so as to avoid the punishment of fire after death. Indeed, the Qur'an instructs the believers to work towards that end.<sup>17</sup>

Pursuit of self-interest demands that one should be conscious of the interest of others and should avoid hurting them. The requirement invokes mutual respect and calls for cooperation - not conflict - for promoting the interest of each other. On this the following passage so often quoted from Adam Smith's *Wealth of Nations* is indeed illuminating.

It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest. We address ourselves not to their humanity but to their self-love, and never talk to them of our necessities but of their advantage. (Smith, vol. a p. 26).

We are immersed in a social milieu of opposite (self) interests which can stay in harmony only on the basis of reciprocal recognition and accommodation. There seems to be some sort of affinity in the deep between self-interest and the moral conduct. Ironical it may look though, the best defense against self-interest is self-interest itself. '*Cause no injury, receive no injury*' is a well-known Islamic dictum. Thus seen, pursuit of self-interest ushers in morality; it promotes civility and consideration for others. Even altruism stems from that root. Evil makes virtue look valuable.

---

<sup>16</sup> Khan and Mirakhor (1992, p.4) regard the pursuit of self-interest both as an obligation and right of an individual flowing from the Islamic concept of justice.

<sup>17</sup> But seek with the (wealth) which Allah has bestowed on thee the home of the Hereafter, and forget not thy portion of the present world" (28:77).

Self interest is invariably treated identical to selfishness but a line does separate the two. Self-interest can be pursued within the ambit of morality which selfishness would always tend to violate. In a race every participant attempts to surge ahead on the basis of his own strength; he is promoting self-interest. However, if he puts his hand on the shoulder of a rival going ahead and pulls him back to win the race, he is the selfish defying the rules of the game. Zola Budd - the South African British runner - was momentarily suspended on a suspicion of tipping in an incidence during the 3000 meter race in the 1984 Olympics at Los Angeles.<sup>18</sup> The demarcation line between self-interest and selfishness is thus very fine as *intention* is the pen that draws it.

Self-interest and selfishness may not though be identical in principle but in practical affairs of the world the demarcation tends to be blurred beyond recognition. However, it is not for this reason alone that the pursuit of self-interest ran into disrepute, even in mainstream economics. There were other difficulties too. First, society being a collection of individuals, there has been a strong presumption in the conventional economics that whatever promotes individual interest would automatically promote that of the society as well. Adam Smith not only brought self-interest to the fore in economics, he is also the author of the *harmony of interest* thesis. He wrote in his *Wealth of Nations*:

An individual generally “neither intends to promote the public interest, nor knows how much he is promoting it...he intends only his own gain, and he is in this, as in many other cases, led by an *invisible hand* to promote an end which was no part of his intention. ... By pursuing his own interest he frequently promotes that of the society more effectively than when he really intends to promote it.”<sup>19</sup> (Smith vol. a, p. 27).

Both logic and empirics prove that the harmony of interest thesis is questionable. For example, the much talked about win-win situations these days need not always be

---

<sup>18</sup> See BBC Report dated August 11, 1984 on their news website for the full story.

<sup>19</sup> The metaphor *invisible hand* originated in the *Theory of Moral Sentiments* (1758) of Adam Smith but he used it just once in his voluminous *Wealth of Nations* and there is room for presumption that the expression implied a reference to the role of Divine order in human life... But there was a rather funny effort on the part of some in Islamic economics to raise a counter scepter designated as the God’s hand as enforcing altruism. A realistic interpretation of the term may look equating it with price mechanism in the mainstream writings as also in M.U. Chapra (2001, p.15). To me, the invisible hand in Smith seems to refer more appropriately to the pursuit of self-interest. Prices in the market are determined by the demand and supply forces. These forces are doubtless affected by the self interest of the buyers and sellers but they are often no less influenced by factors additional to self-interest of the parties, say for example, by the monetary and fiscal policies of a country.



conducive to social well-being unless the division of the gain between the parties can also be shown as equitable. The specter of crushing poverty and sticky inequalities in income distributions within and across nations provide ample evidence falsifying the proposition.

The second follows from the first. It is the postulate that a person is a rational being if he works to promote *only* his own interest. This view has long been dubbed in economic discourse as egoistic rationality. Its criticism – scathing at times – is well-known and much documented in the literature; I need not reproduce it here. In Islamic economics the proposition led to the coinage of a few reaction smelling terms: some sought to replace the hand of God for the *invisible hand* in Adam Smith. Others attempted to paint the picture of an Islamic man to pale the mainstream ‘economic man’ into insignificance. Such efforts were presumably amateurish, if not absurd. On a sober note, the evaluation of the proposition in Syed Omar Agil (1992) is quite balanced. But it was Professor A. K. Sen (1971) who in his *Rational Fools* put the final nail to the coffin of the proposition. One cannot but enjoy the sarcasm the very title of the essay carries.<sup>20</sup> That it has been reproduced several times and in different places is a measure of its vitality.

Finally, not only is the pursuit of self-interest considered definitive for the notion of rationality, there is a further insistence that conduct is rational only when it single mindedly works for maximization of economic gains – consumers must maximize utility and producers profit. Maximizing behavior has attracted much criticism in mainstream economics and its Islamic counter part just rejects the principle as unacceptable. We examine the debate in the following section. We shall take profit maximization as an illustrative case.

## 5. Maximizing behavior

Maximizing behavior may relate to an economic magnitude such as utility or profit; it may also relate to a non-economic magnitude like goodwill of neighbors or the pleasure

---

<sup>20</sup> The figure of the young handsome Sen as I first saw him on September 9, 1965 chairing a selection committee meeting rises in my imagination even today as that interview brought me to the once famous Delhi College of the University of Delhi. The institution was later renamed as Delhi Zakir Husain College and is now housed in a new building on Nehru Marg, New Delhi.

of God. To denounce the conduct in the first case and appreciate, rather promote, it in the second must make the Islamic stance internally inconsistent. The point has not received due attention in Islamic economics.<sup>21</sup>

The pursuit of profit maximization is apparently avaricious and seems to conflict with moral conduct. For this reason maximization norm has received much criticism in the mainstream literature itself. Still, it survives and for two reasons. First, price formation under varying market conditions is difficult to explain without a maximization hypothesis both on the demand and supply sides of the market. Second, the critics of the assumption have not so far been able to produce an alternative rule of behavior having the same explanatory or predictive value as maximization carries.

However, most Islamic economists denounce a maximizing behavior. A typically vociferous condemnation comes from M. N. Siddiqi (1998). Among the basic points of departure for Islamic economics from its mainstream counterpart, he accords first priority to the rejection of the behavior aimed at maximizing private gain on the part of an economic agent. He writes:

The maximization hypothesis is not very helpful in understanding the economy, any economy. But it is entirely unacceptable as an aid to the understanding of an Islamic economy, any Islamic economy. Even some understanding of Islam and some compliance with its teachings is sufficient to create a society which defies the maximization hypothesis. Something else is needed (p. xiii, see also pp. 17 and 28).

This is rhetoric pure and simple. The author provides little reasoning or documentation for his opinion and says not a word on what the ‘something’ that he is looking for could possibly be (Hasan 1998).<sup>22</sup>

Islamic economists usually plead for some reasonable or fair profit as a Shari’ah alternative to the maximum. One comes across diagrams showing how fair profit can

---

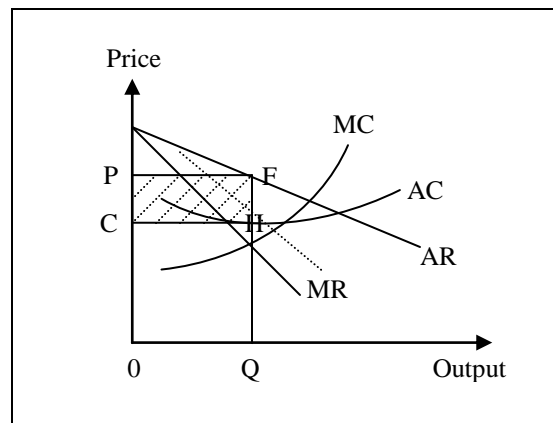
<sup>21</sup> There are Islamic economists who approve rather grudgingly the act of profit maximization but join the consensual condemnation of utility maximization. The confusion is further confounded when there are still others who change their position without notice.

<sup>22</sup> Siddiqi (1992) approves the use of conventional analysis of a firm’s equilibrium via the marginal cost and marginal revenue curves based on the maximization of profit assumption. But he believes that the assumption can be relaxed to incorporate objectives relating to the good of society. How he does not show.

replace the maximization norm. I have shown the weaknesses of such diagrams earlier (Hasan 2002, p. 116 n.20). Here I shall argue why the fair profit norm cannot be used for price determining process in free market operations that Islam upholds.

Under perfect competition, price is determined by the forces of market demand and market supply. Individual firms have no pricing power; they are just price takers. In the long-run firms are able to make only normal profit which is just equal to implicit costs or opportunity costs of the factors the owners of business supply to the firm. No Islamic economist will probably dispute that normal profit is fair profit as well. In the short-run, a firm can earn profit in excess of the normal. But it is soon competed away. In any case firms do not get the excess all by design.

The long run position is no different even when competition is not perfect and firms enjoy some pricing power; profit is again normal and, therefore, fair. In the short run the price that would give only fair profit is difficult to determine. Consider the following Figure 2. Here the profit of the firm – shaded area PCHF is the maximum under given market conditions. Now, the firm following the advice of Islamic economists wants to have only fair profit not the maximum the figure shows. Its difficulty is that in the absence of an externally available bench mark it does not know by how much it should shrink the rectangle PCHF to make profit fair? It is willing to reduce the price but does not know what price cut would make profit fair? Again, the reaction of customers as also of the rivals to a price reduction is difficult to gauge. A professor in one of his books tried



**Figure 2:** Short-run equilibrium of the firm under Imperfect competition

to show how profit could be made fair. In a Figure as the one above he shifted the marginal revenue curve MR to the right – see the dotted line - keeping AR un-shifted.<sup>23</sup> The modification reduced price and increased equilibrium output. This clearly was untenable and misleading.<sup>24</sup>

The moral code of sellers going for a fair profit, however defined, could work in a small time social scenario (Refer to Section 2 above) when production was mostly to fill standing orders and adding a margin to the procurement cost of inputs was a common trade practice. It was also easy to have an idea of fairness in transactions. Today, we are living in an era of mass production for the markets. The number and variety of goods has gone up tremendously. Producers or sellers are subject to market discipline (or indiscipline). They have limited control over the determination of the prices for their goods. Incidentally, let us ask if the Islamic banks are able to use mark-ups yielding only fair profits? The fact is that the concept of a fair price or profit is largely external to modern business. Needed information is rarely available, let alone the seeking of it. Purchasers' associations, NGOs and ultimately the state authorities work as watch dogs for the people on fair trade practices including, quality, price or profit. The matter falls in the public policy domain. The limitations of a fair profit notion in theory and practice take us back to the maximization of profit issue.

Profit maximization has two broad aspects: motivational and operational. The key questions are: do firms want to maximize their profits, and if yes, can they really achieve the goal? Much controversy has centered on these issues in the mainstream literature.<sup>25</sup>

---

<sup>23</sup> The anomaly seems to lend credibility to an assertion in Waleed Addas (2006) that Islamic economists reject the Western rationalistic explanation of the law of demand but have themselves not been able to spell out an alternative law based on their view of 'bounded rationality' or altruism (See pp. 33-35)

<sup>24</sup> The Professor did not suggest any rule for the extent of MR shifting to make profit fair, let alone defining such profit. He ignored the important fact that there is a mathematical relationship between the slopes of straight line marginal and average revenue curves; one cannot be moved without an appropriate movement of the other.

<sup>25</sup> For a review of the literature and fuller discussion on these points see Hasan (1975) Chapter IV 'Profit maximization as business objective' (pp.59-82).

On the question of motivation, it is agreed that in the case of small owner-operated firms profit maximization has always been the guiding star of the decision making process over time and space. But with the rise of modern corporations to dominance the objective has long paled into insignificance. Managers are well compensated professionals. The common shareholders are a scattered lot. They are not interested in knowing nor have the means to know if the profits of their company are indeed being maximized. They are happy with dividends so long as they find them satisfactory. Managers are interested more in their reputation, peace of mind, leisure and unsuspecting rivals. Corporations, after crossing a profit point, become more interested in growth of variables like size, sales and share of the market. However, careful observation and analyses of inside happenings in corporations will convince one that the clouds of alternative goals shine only in the light of old good moon of profit behind them. In any case, other motives that are claimed to have replaced profit maximization in large corporations are mostly situation specific; they lack its global character and stability.

In fact, we face greater difficulties on the feasibility side of the fence. Profit for maximization lies in the future; it is an *ex ante* concept. Future consequences of most decisions are uncertain. It is thus argued that even if firms desire maximum profits they do not have the means of knowing which of the alternative courses of action – often overlapping - would ensure achievement of the goal; realized profit may fall short of the expected (maximum); it could even be negative. But uncertainty has to be taken as a fact of life like sun or rain. It can make most rational decisions look idiotic if expectations fail. But that does not bar people from peeping into the future. All planning in human life would be non-existent if we were so possessed with the possibility of expectation failures due to uncertainty. Profit maximization is a *directional* concept. It only says that due to scarcity of resources firms should not miss if they feel there is a legitimate opportunity to enhance profits. Maximization spurs to efficiency. It compels to search for obtaining as much output as possible from inputs at the disposal of a firm or at using minimum inputs to produce a given output. Figure 3 presents a schematic demonstration of the two possible aspects of production strategies for profit maximization. Here, Xs represent the two inputs. Note that the two processes are not the inverse of one another.

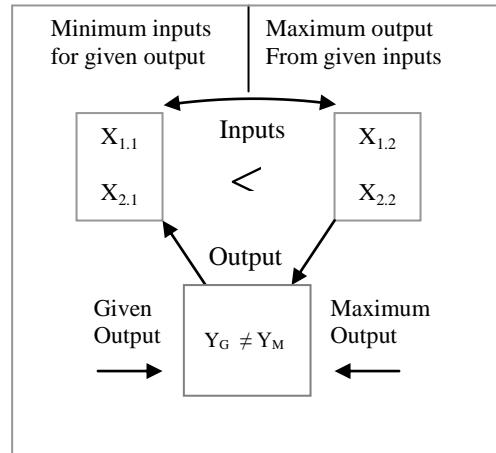


Figure 3: Results need not be identical

Maximization *per se* is value neutral; what is maximized, how and to what end are the questions that can assign to it ethical labels – good or bad. Also, it is a mathematical concept inapplicable to variables that cannot be measured and divided infinitesimally. On that criteria profit maximization is a heuristic notion. Roads carry goods far and near in a country to facilitate growth but on their own add nothing to them in weight or volume. Likewise, maximization has no content yet it is a powerful tool for economic analysis; it moves markets to equilibrium. It can be and is used with legal provisions to safeguard against the potentially undesirable consequences. Shari’ah provides ample protection to both consumers and the hired factors of production against profit seeking at their cost. Islamic economics need not throw away the baby with the bath water (Hasan 1992).

## 6. Concluding remarks

In sum, I have tried to remove some misconceptions concerning a few terms – scarcity of resources, pursuit of self-interest and maximization of gains – in Islamic economics. These concepts are inter-related as the foregoing discussion has amply shown. They constitute minimal tools needed to explain and investigate economic phenomena to help formulate theories with predictive ability needed to guide economic policy. The objective of this effort is to end if possible the diversity of opinion and develop a sort of definitional consensus on these foundational stones of economics including Islamic.

The misconceptions presumably cropped up for two reasons. First was the lack of adequate knowledge about mainstream economic theory and policy available to earlier Islamic scholars. Second was the pent up desire to demonstrate after independence from the foreign rule that Islamic economic thinking was independent of and superior to the Western positions. Both hindered the growth of Islamic economics and triggered secular antagonism against the nascent discipline.

Remember that the source of *all* knowledge is God; the stock of knowledge is thus divine in origin. It is only the criteria of choosing from the stock that can and does bifurcate it into categories like economic and non-economic or religious and non-religious. Faith system determines choice in the case of religion. The rules for Islamic selection are: accept all pieces of knowledge that Revelation palpably approves. Reject all knowledge that evidently conflicts with Islamic requirements. The vast area between the two ends God has left in his mercy open to believers' discretion on the generic principles of *facility* and *expedience*. The knowledge of economics coming from mainstream sources must be sifted and passed through the Islamic filters for acceptance.<sup>26</sup>

This I have done with regard to three basic and closely related analytical tools in mainstream economics – scarcity, self-interest and maximization – and shown that they can be incorporated in Islamic economics with advantage after interpretative modifications to meet the Shari'ah norms. The modification allows having a firmer and more logical definition of Islamic economics for example as under.

*Islamic economics is the subject that studies human behavior in relation to multiplicity of wants and scarcity of resources with alternative uses so as to maximize falah that is the well-being both in the present world and the hereafter.*

The definition mirrors the spirit of the following prayer from the Holy Qur'an that the believers so frequently address to God

“Our Lord! Give us in this world that which is good  
and in the hereafter that which is good and save us  
from the torment of fire”. (2: 201).

---

<sup>26</sup> Islamic economics must accept contributions from other disciplines and both science – positive and normative as well as art to help realize human well-being here and in the hereafter (Addas 2006, Chapter 7).

The above definition of Islamic economics is a balancing combination of the positive and normative (spiritual) aspects of human existence.<sup>27</sup> It underlines why and how the teaching of economics in Muslim institutions of higher learning must integrate the two in their courses of study and reading materials. The urgency of producing textbooks laced with modern pedagogic features can hardly be overemphasized.<sup>28</sup>

God knows best.

## References

Ahmad, Khurshid (November 6, 2007): *Capitalism, socialism, the welfare state and Islam*, Prize winner's lecture at IRTI/IDB Jeddah (Power point slides).

Addas, Waleed A. J. (2006): *Methodology of Economics: Secular Versus Islamic*, Research Management Centre, International Islamic University of Malaysia.

BBC Report (August 11, 1984) on Zola Budd story.

AI 3 (2006): *The Biggest Disruption in History: Massively Accelerated Growth Since the Industrial Revolution*  
<http://www.mkbergman.com/250/the-biggest-disruption-in-history-massively-accelerated-growth-since-the-industrial-revolution/>

Chapra, M. U (2001): *What is Islamic Economics*, IDB Prize winners lecture series, No.9, IRTI (First published in 196).

Coase R. W (1984): *Adam Smith's View of Man* in J.C. Wood (ed.) *Adam Smith: Critical Assessments* Croom Helm.

Farooq, M. Omar (2006): *Islamic law and the use and misuse of Hathiith*, New Horizon. Also available at: <http://www.globalwebpost.com/farooqm>

---

<sup>27</sup> It would be a betrayal of facts to believe or argue that mainstream economics is value-neutral or it ever was; principles of economics have invariably been the principles of economic policy providing cover to national interests in an unequal world.

<sup>28</sup> The point is that Muslims cannot be kept unlimbered from mainstream economics. And if that is an imperative why not look at that discipline from an Islamic angle, rejecting what cannot be admitted, modifying what can be made to fall in line with faith and allowing all that is neutral in the area. M. N. Siddiqi too has made the point in his works under reference. The present author has ventured taking to this course in his two textbooks *Macroeconomics* (2009) and *Fundamentals of Microeconomics* (2011) both published by the Oxford University Press, Malaysia. Comments/suggestions on the books are welcome.



Haneef M. Aslam and Furqani, M (2004): *Contemporary Islamic Economics: the Missing Dimension in Genuine Islamization*, Journal of Thoughts on Economics Vol.19, No.04, pp.29-48.

Hasan, Zubair (2002): “*Maximisation Postulates and their efficacy for Islamic Economics*” American Journal of Islamic Social Sciences, Vol. 19, No.1

----- (1998a): Book Review: “*Teaching Economics in Islamic Perspective*” By M.N.Siddiqi, Islamic Economic Studies Vol. 6, No. 1, 1998 pp. 111-132

----- (1998): “*Islamization of Knowledge in Economics: Issues and Agenda*” IIUM Journal of Economics and Management Vol. 6 No.1, pp. 1-40, (Special Issue).

----- (1996): Book Review: *An Introduction to Islamic Economics* by M. Akram Khan The American Journal of Islamic Social Sciences, Vol. 13, No. 4, Winter, pp. 580-585.

----- (1992): ‘*Profit Maximisation: Secular Versus Islamic*’ in Sayyid Tahir et al (Ed) ‘*Readings in Microeconomics: An Islamic Perspective*’ Longman, Malaysia (Chapter 20, PP. 239-255).

----- (1988): ‘*Distributional Equity in Islam*’ in Munawar Iqbal (Ed.) ‘*Distributive Justice and Need Fulfilment in an Islamic Economy*’, the Islamic Foundation Leicester, U.K. (Chapter 1, PP. 35-62).

----- (1985): “*Determination of Profit and Loss Sharing Ratios in Interest-Free Business Finance*”, Journal of Research in Islamic Economics, Jeddah Vol. 3, No. 1, pp. 13-27.

----- (1975): *Theory of Profit*, Vikas Publishing House, New Delhi 110002.

Kahf, Monzer in Sayyid Tahir et al (Ed) ‘*Readings in Microeconomics: An Islamic Perspective*’ Longman, Malaysia (Chapter 9, The Theory of Production PP.113-119).

Khan, M. Akram (1994): *An Introduction to Islamic Economics*, International Institute of Islamic Thought and Institute of Policy Studies, Islamabad Pakistan.

Khan, Mohsin S and Mirakhor A. (1992): *Islam and the Economic System*, Review of Islamic Economics, Vol.2, No.1 pp.1-29.

Kuran, Timur (1989): “*On the notion of economic Justice in contemporary Islamic thought*” International Journal of Middle East Studies, Vol. 21, No.2 pp.171-191. Available also at <http://econpapers.repec.org/RePEc:fth:socaec:m8814>.

League Table (2007) in *Does Human Knowledge double Every 5 Years?*  
Web [http://newsfan.typad.co.uk/does\\_ human knowledge double/](http://newsfan.typad.co.uk/does_human_knowledge_double/) Monday 9.8.2010 11.10 PM

Matt Rosenberg (2009): About.com Guide  
[<http://geography.about.com/od/obtainpopulationdata/a/worldpopulation.htm>]

Robbins, Lionel (1935): *An Essay on the Nature and Significance of Economic Science*, 2d. ed. 1945 reprint Macmillan, London.

Sen, A. K. (1977): *Rational Fools: A Critique of the Behavioral Foundations of Economic Theory*, Philosophy and Public Affairs, Vol. 6, No. 4. pp. 317-344.

Siddiqi, M. N (1984): *Islamizing economics*, International Institute of Islamic Thought (IIIT), Herndon, VA 22070 – 4705, USA

----- (1992): *Teaching Economics in Islamic Perspective*, in in Sayyid Tahir et al (Ed) 'Readings in Microeconomics: An Islamic Perspective' Longman, Malaysia (Chapter 20, PP. 1-33.

----- (1998): *Teaching Economics in Islamic Perspective*, Scientific Publishing Centre, King Abdulaziz University, Jeddah S.A

----- (2006): *Islamic banking and finance in theory and practice: A survey of the state of the art*, Islamic Economic Studies, Vol. 13, No. 2, February.

Silva, S.S da and Reis R.P and Ferreira, P.A (2009): *Concepts of nature value: Are the particular characteristics of nature goods being considered?* VII International PENSA Conference, Sao Paulo, Brazil

Smith, Adam (1996 print): *An Inquiry into the Nature and Causes of the Wealth of Nations*, The Glasgow Edition.

Syed Agil, Syed Omar (1992: *Rationality in Economic Theory*, in Sayyid Tahir et al (Ed 1992) *Teaching Economics in Islamic Perspective* 'Readings in Microeconomics: An Islamic Perspective' Longman, Malaysia (Chapter 2, PP. 31-48).

The World Economy, *Historical Statistics 1950 – 2001* Tables 7a, 7b, and 7c (World Economy (WE) website)

Olsen, James Stewart, (2002) *Encyclopedia of the Industrial Revolution*, Greenwood Publishing Group, 2002.